

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

In the Matter of)	
)	
Expanding the Economic and Innovation)	GN Docket No. 12-268
Opportunities of Spectrum Through)	
Incentive Auctions)	
)	

To: Chief, Wireless Telecommunications Bureau

COMMENTS OF MOBILE FUTURE

Mobile Future submits these comments in response to the Wireless Telecommunications Bureau’s Public Notice seeking additional comment on certain variations of the “Down From 51” band plan for the 600 MHz band.¹ The consensus “Down From 51” band plan proposed by a broad cross-section of wireless providers, broadcasters, and equipment manufacturers maximizes the public interest benefits of the 600 MHz spectrum² and should be adopted without significant revision.

A successful incentive auction is critical to maintaining our nation’s global leadership in mobile innovation and to make spectrum available to meet wireless consumer demand, and the design of the 600 MHz band is central to the Commission’s efforts to encourage maximum participation in the auction. With skyrocketing consumer demand for new data intensive mobile services, the need for spectrum is even more urgent now than it was three years ago when the

¹ Wireless Telecommunications Bureau Seeks to Supplement the Record on the 600 MHz Band Plan, DA
² Letter from Joan Marsh, AT&T, Rick Kaplan, National Association of Broadcasters, Kathleen Ham, T-Mobile, Peter Pitsch, Intel Corporation, Dean Brenner, Qualcomm, and Charla Rath, Verizon Wireless, to Gary Epstein and Ruth Milkman, Federal Communications Commission, (Jan. 24, 2013).

Obama Administration announced plans to nearly double the amount of spectrum available for commercial wireless use. The latest industry statistics continue to bear out the pressing need for Commission action to repurpose spectrum as quickly and efficiently as possible. According to the latest research from the Pew Center for Internet and American Life, 56% of American adults are now smartphone users, up from 35% in 2011.³ Consumers downloaded over 25 billion applications to smartphones and tablets in 2012 alone⁴ and by the end of 2013 will be downloading 2 billion apps per week.⁵ In one year's time, average individual monthly data consumption grew 250 percent.⁶

While the Bureau should be applauded for a clear focus on the need for a viable 600 MHz band plan, the recent Public Notice introduces additional uncertainty and undermines the growing consensus behind the “Down From 51” approach. Specifically, the modifications to the consensus proposal suggested in the Bureau’s Public Notice raise engineering and policy concerns. The Commission should adopt the consensus band plan without significant alteration, and dedicate its finite resources to other technical and engineering challenges facing a successful incentive auction.

The “Down From 51” Consensus. While it is difficult to find unanimity in a proceeding of this scope and complexity, a broad cross-section of industry and consumer groups supports the

³ Pew Center for Internet and American Life, “Smartphone Ownership 2013” (June 5, 2013) *available at* <http://www.pewinternet.org/Reports/2013/Smartphone-Ownership-2013.aspx>.

⁴ Mobile Future Infographic, “The United States of Wireless,” (June 3, 2013) *available at* <http://mobilefuture.org/resources/united-states-of-wireless-infographic/> (“Mobile Future Infographic”).

⁵ Flurry, “Holiday 2012 Delivers Historical Worldwide App Downloads” (Jan. 2, 2013) *available at* <http://blog.flurry.com/bid/92809/Holiday-2012-Delivers-Historical-Worldwide-App-Downloads>.

⁶ See Mobile Future Infographic.

“Down from 51” band plan.⁷ Under this approach, the Commission would adopt a contiguous 600 MHz band plan starting at existing Channel 51, maximizing the amount of paired spectrum above Channel 37 and generally avoiding broadcast television stations in the duplex gap.

Broadcasters, like Belo, stress that this plan “is spectrally efficient and far superior” to alternative approaches.⁸ Equipment manufacturers, including Sony, explain that this band plan “would greatly simplify the design of filters for both televisions and for mobile handsets.”⁹

Wireless operators echo these comments emphasizing that the consensus plan would help “ensure that service providers and their vendors can efficiently incorporate the 600 MHz into wireless devices and networks.”¹⁰ Comcast and other cable operators also support this approach, explaining that “[c]ommenters representing nearly every sector with an interest in this proceeding favored the ‘Down From 51’ approach.”¹¹ Public interest groups similarly highlight the “clear consensus” behind the “Down From 51” band plan, which is “supported as technically superior by virtually all major industry commenters.”¹² High-tech companies, like Google, equally stress that this approach “enjoys widespread support from parties whose participation

⁷ Comments of Belo Corp., at 18 (Jan. 25, 2013) (“Belo Comments”); Comments of ABC Television Affiliates *et al*, at 43-45 (Jan. 25, 2013) (“ABC Affiliates Comments”); Comments of National Association of Broadcasters, at 45-47 (Jan. 25, 2013) (“NAB Comments”); Comments of Sony Electronics Inc., at 4 (Jan. 25, 2013) (“Sony Comments”); Reply Comments of Alcatel Lucent, at 3-4 (Mar. 12, 2013) (“Alcatel Lucent Reply”); Comments of Research in Motion Corp., at 7-8 (Jan. 25, 2013) (“RIM Comments”); Reply Comments of Comcast Corp. and NBCUniversal Media, LLC, at 19 (Mar. 12, 2013) (“Comcast Reply”), Reply of National Cable & Telecommunications Association, at 4 (Mar. 12, 2013) (“NCTA Reply”).

⁸ Belo Comments at 18; *see also* ABC Affiliates Comments at 43-45; NAB Comments at 45-47.

⁹ Sony Comments at 4; Alcatel Lucent Reply at 3-4; RIM Comments at 7-8; Comments of Qualcomm Corp., at 4-5 (Jan. 25, 2013) (“Qualcomm Comments”); Comments of Motorola Mobility LLC, at 9-10 (Jan. 25, 2013) (“Motorola Mobility Comments”).

¹⁰ Verizon Reply at 1; *see also* AT&T Reply at 12-14.

¹¹ Comcast Reply at 19; *see also* NCTA Reply at 4.

¹² Reply Comments of Public Interest Spectrum Coalition, at 11 (Mar. 12, 2013).

will be critical to maximize the value of the 600 MHz band.”¹³

There is good reason for this strong consensus. This band plan would facilitate clearing as much 600 MHz spectrum as possible, thereby maximizing the amount of licensed spectrum available for mobile broadband services and helping ensure a successful auction. It also would reduce the risk of interference experienced by wireless users and broadcast audiences alike. There is neither an engineering nor economic basis to depart from this sound approach.

Proposed Modifications Would Not Serve the Public Interest. The Public Notice seeks comment on several modifications to the consensus approach, including shifting to a “down from 51 reversed” band plan and requiring a TDD approach.¹⁴ Neither should be incorporated into the final 600 MHz band plan.

The auction process is highly complex, and the Commission should avoid injecting additional uncertainty or complexity to key elements of the auction, including the band plan. The practical reality is that the Commission’s band plan must attract wireless operators willing to bid billions of dollars to ensure a successful auction, and the Commission should avoid any steps that would reduce the attractiveness or commercial viability of the to-be-auctioned spectrum, introduce engineering complexity that could potentially delay deployment in the band, or increase the network or handset costs of future 600 MHz operations.

One of the primary benefits of the consensus plan is to eliminate the need for a guard band separating the new 600 MHz band and the existing 700 MHz band.¹⁵ The “down from 51 reversed” proposal—rather than limiting the size and number of guard bands— would require an

¹³ Reply Comments of Google Inc., at 3 (Mar. 12, 2013) (“Google Reply”).

¹⁴ Public Notice at 3-6.

¹⁵ See e.g., Alcatel Lucent Reply at 3.

extra guard band between the 600 MHz band and 700 MHz band. Adopting a band plan that necessitates more than the minimum number of guard bands would run afoul of the statutory directive that guard bands should “be no larger than is technically reasonable to prevent harmful interference.”¹⁶ A broad cross-section of commenters support the principle of avoiding unnecessary guard bands,¹⁷ as Verizon explains, the “Down From 51” approach is superior because it “avoids wasting spectrum because there is no need for a guard band.”¹⁸ Other commenters, like GE Healthcare, stress the independent benefits of locating the 600 MHz uplink directly adjacent to the 700 MHz band.¹⁹

The vast majority of commenters also support FDD operations in the 600 MHz band,²⁰ and the Commission should reject efforts to force TDD solutions on the 600 MHz band. T-Mobile highlights that FDD LTE technology is the “most widely used, most readily available form of 4G broadband,”²¹ and Google and Microsoft agree that the FCC should implement an FDD band plan.²² AT&T details the technical challenges of TDD operation in the 600 MHz band, highlighting the harmonic interference to FDD operations in other bands and potential adjacent and co-channel interference within the 600 MHz band.²³

¹⁶ See Middle Class Tax Relief and Job Creation Act of 2012, Pub. L. No. 112-96, § 6407(b), 126 Stat. 156, 231 (2012) (“Spectrum Act”).

¹⁷ See e.g., Qualcomm Comments at 7-13.

¹⁸ Comments of Verizon and Verizon Wireless, at 14 (Jan. 25, 2013) (“Verizon Comments”).

¹⁹ Comments of GE Healthcare, at 5, 21-22, 24-30 (Jan. 25, 2013).

²⁰ AT&T Comments at 18-19; Comments of Cellular South Inc. d/b/a C Spire Wireless, at 6 (Jan. 25, 2013); CTIA Comments at 21; Comments of Google Inc. and Microsoft Corp., at 32 (Jan. 25, 2013) (“Google/Microsoft Comments”); Comments of MetroPCS Communications, Inc., at 21 (Jan. 25, 2013); Motorola Mobility Comments at 9; Comments of National Cable & Telecommunications Association, at 12 (Jan. 25, 2013); Nokia Comments at 11-12; Qualcomm Comments at 4; RIM Comments at 8; Sony Comments at 4; Verizon Comments at 17-18; Reply Comments of TechAmerica, at 4 (Mar. 12, 2013).

²¹ T-Mobile Reply at 16; Reply Comments of United States Cellular Corp., at 20-22 (Mar. 12, 2013).

²² Google/Microsoft Comments at 32; Nokia Comments at 10; T-Mobile Reply at 36-37.

²³ AT&T Reply at 2-3, 15-17; RIM Comments at 8.

Conclusion. The consensus band plan reflects the collaborative efforts of industry representatives to maximize the amount of licensed paired spectrum available for mobile broadband and minimize technical issues in order to promote the viability of the spectrum for deployment to meet consumer demand. The plan is supported by a broad cross-section of often opposed stakeholders. The Commission should adopt the consensus 600 MHz band plan in its critical efforts to free underused broadcast spectrum for wireless use in a timely manner.

Respectfully submitted,

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